

WHAT IS CLAIMED IS:

**Claim 1:** A power supply comprising:

an AC/DC converter which converts an input AC power into DC power and outputs the DC power to an output terminal thereof, said AC/DC converter having power factor improvement function;

a DC/DC converter whose an input terminal is connected to the output terminal of said AC/DC converter, said DC/DC converter converting a DC voltage inputted thereto into a voltage value to be applied to and used at a load;

a DC converter whose a first terminal is connected to the output terminal of said AC/DC converter and the input terminal of said DC/DC converter; and

DC power storage means which is connected to a second terminal of said DC converter and which supplies said DC/DC converter with a DC power through said DC converter;

wherein usually, said load is supplied with the DC power from said AC/DC converter through said DC/DC converter, and said DC power storage means connected to said second terminal of said DC converter is supplied with the DC power to be charged from said AC/DC converter through the output terminal of said AC/DC converter, the first terminal of said DC converter and said DC converter; and

wherein, when the input AC power is not applied to said AC/DC converter, said load is supplied with the DC power from said DC power storage means through said second terminal, said DC converter, said first terminal and said DC/DC converter in order.

**Claim 2:** A power supply according to claim 1, wherein said DC converter comprises:

a first converter having an AC terminal, and a DC terminal which is said first terminal connected to the input terminal of said DC/DC converter;

a transformer having a high-voltage side winding connected to the AC terminal of said first converter, and a low-voltage side winding; and

a second converter having an AC terminal connected to the low-voltage side winding, and a DC terminal which is said second terminal connected to said DC power storage means.